



DoD Sustainability Application Guide for Historic Properties

04-220

Background:

In 2002, the Office of the Federal Environmental Executive (OFEE), a task force of the White House Council on Environmental Quality, adopted sustainable construction as one of its six priority areas. Emphasis was placed on energy consumption, materials use, waste, water, and air quality. The scope of interest included siting, design, construction, operation, maintenance, and removal of federal buildings. An OFEE report, *The Federal Commitment to Green Building: Experiences and Expectations*, reviews and assesses federal government policies and activities that promote sustainable construction. It identifies barriers to progress related to budget, education, research, and metrics, and it provides recommendations on how federal agencies can make further progress. DoD has major roles and responsibilities in advancing OFEE goals because military activity accounts for two-thirds of all federal building utilization and floor space. The cost of energy used to support this inventory exceeded \$2.6 billion in Fiscal Year 2002.

A unique potential DoD resource for promoting federal sustainability goals is the large inventory of military buildings listed or eligible for listing in the National Register of Historic Places. Section 110 of the National Historic Preservation Act (NHPA) requires federal agencies to use their historic properties to the maximum extent feasible for heritage reasons, and a significant number of resources are already dedicated to this activity. However, it is now apparent that there are compelling economic reasons to investigate the reutilization of historic infrastructure (i.e., building rehabilitation promotes DoD goals for transformation to sustainable installations). By preserving or renovating significant historic properties in accordance with the Secretary of the Interior's (SOI) Standards, installations can revitalize a building's original passive energy-conservation features such as skylights, operable windows, transoms, etc. These renovations can restore the integrity of a historic building while improving daylighting, indoor air exchange, and the like, for better energy management, healthier indoor environments, and reduced life-cycle costs.

Various military directives provide basic guidance on incorporating sustainability principles into the design, construction, and operation of new facilities. However, these emphasize new construction rather than rehabilitation of existing facilities. A compelling argument can be made that appropriate rehabilitation and reuse of existing facilities, rather than new construction, is the

single most important way for an installation to improve its sustainability rating while meeting current and developing mission requirements.

Objective:

The primary objective of this research was to produce guidance that concurrently advances OFEE, DoD, and NHPA Section 110 priorities by comparing and aligning federal heritage and sustainability requirements, methodologies, and metrics in order to identify where they are mutually supportive. The guidance uses the Leadership in Energy and Environmental Design–Existing Building (LEED-EB) rating system to validate the informed retention, reuse, and rehabilitation of historic DoD buildings. The intended users of this guide are installation cultural resources and public works personnel, project planning and design teams, and user groups and tenants.

Summary of Approach:

The research was accomplished by (1) investigating inherent features of historic buildings and sites that support sustainability objectives; (2) surveying and assessing existing LEED-EB qualifying historic building projects to determine the best ways of obtaining LEED-EB credits; (3) compiling a comprehensive list of sustainability strategies for achieving LEED-EB credits; and (4) providing resources for costing, green products/materials, and LEED certification.

Benefit:

Multidisciplinary facility design teams made up of sustainability and historic preservation specialists can benefit from practical guidance that promotes the collaborative development of affordable solutions to compliance conflicts that arise when sustainability upgrades are carried out on historic properties.

Accomplishments:

The final technical report interprets LEED-EB and presents methods and technologies for LEED-EB point accumulation. It also identifies sustainability strategies that may support or conflict with the SOI Standards and suggests ways to satisfy the dual requirements.

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